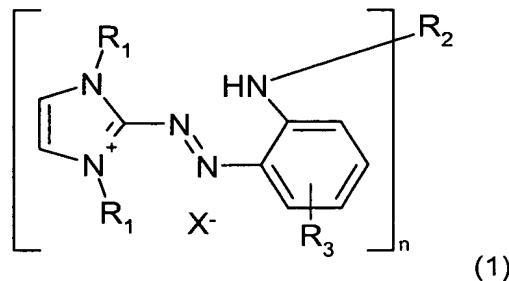


Claims:

## 1. Cationic dye of formula (1)



wherein

$R_1$  is an unsubstituted or substituted  $C_1-C_{14}$ alkyl or an aryl radical;

$X^-$  is an anion;

$R_3$  is hydrogen, an unsubstituted or substituted  $C_1-C_{14}$ alkyl, aryl radical,  $C_1-C_6$ alkoxy, cyanid, nitro or halide;

$n$  is 1 or 2; and

if  $n$  is 1, then  $R_2$  is hydrogen, unsubstituted or substituted  $C_1-C_{14}$ alkyl; or

if  $n$  is 2, then  $R_2$  is an unsubstituted or substituted  $C_1-C_{14}$ alkylen.

## 2. Cationic dye according to claim 1, wherein

$R_1$  is methyl.

## 3. Cationic dye according to any of claims 1 or 2, wherein

$R_1$  is methyl,

$n$  is 2, and

$R_2$  is a substituted or unsubstituted  $C_1-C_8$ alkylen.

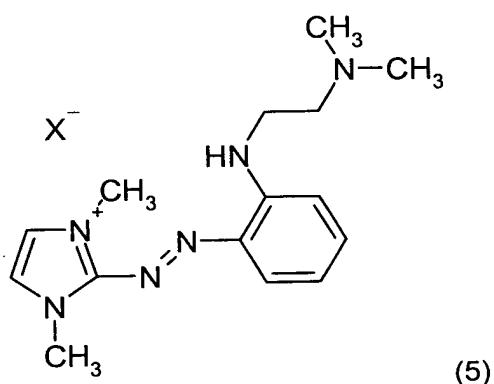
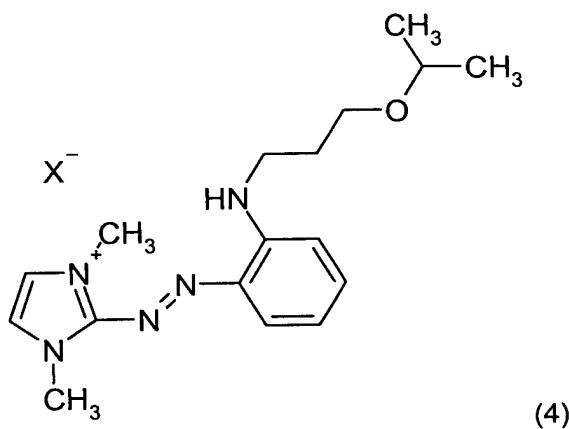
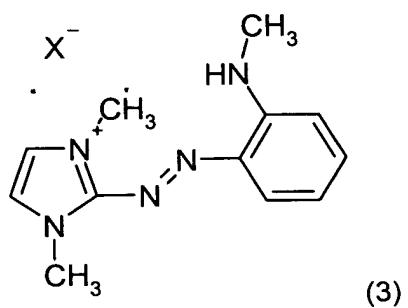
## 4. Cationic dye according to any of claims 1 to 3, wherein

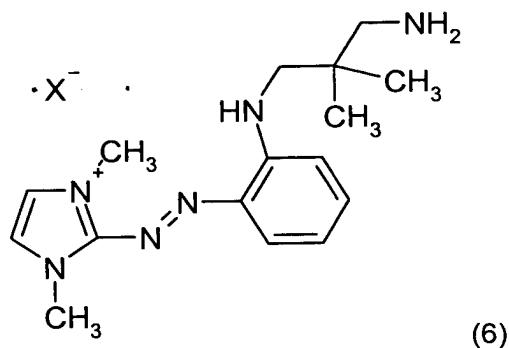
$R_1$  is methyl,

$n$  is 1, and

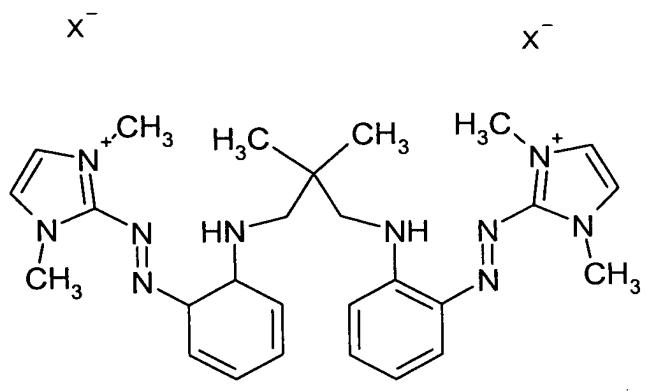
$R_2$  is a substituted or unsubstituted  $C_1-C_{12}$ alkyl.

## 5. Cationic dye according to any of claims 1 to 4, of formulae (3), (4), (5), (6), (7), (8), (9), (10), (11), (12), (13), (14), (15), (16) or (17)

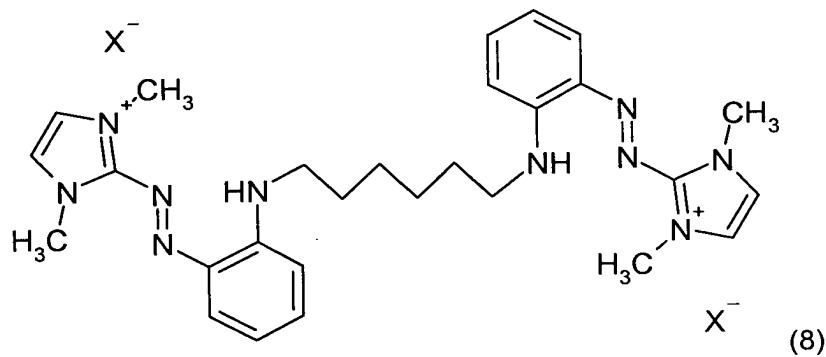




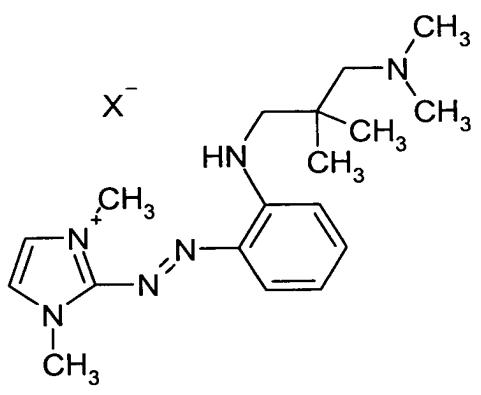
(6)



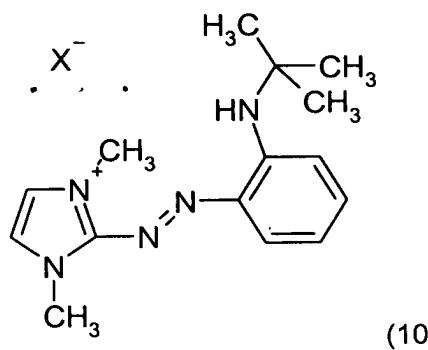
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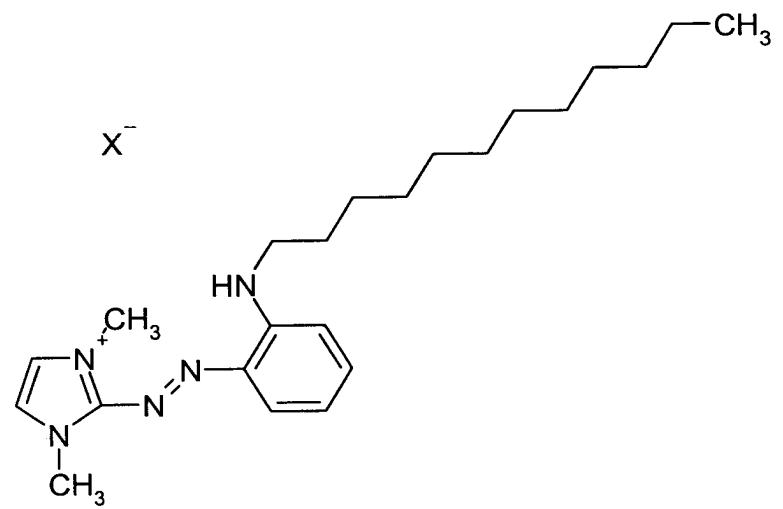
(8)



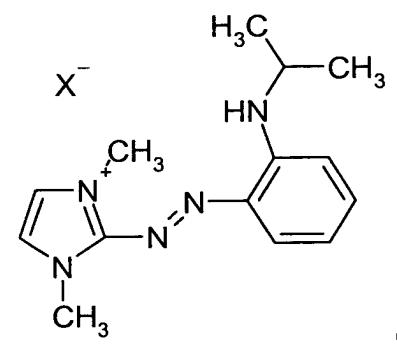
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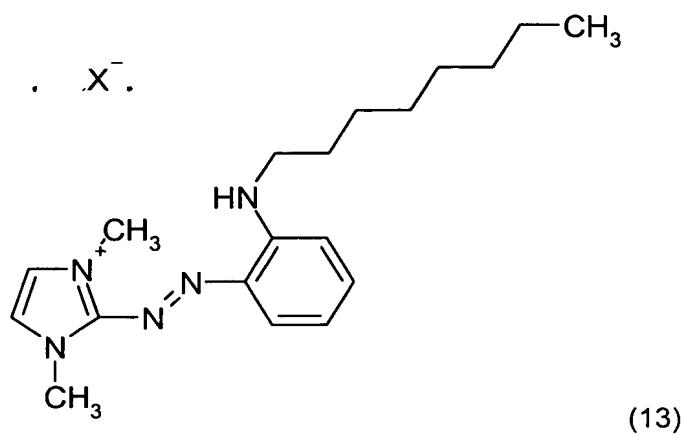
(10)



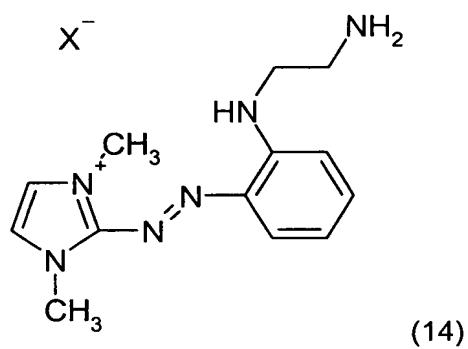
(11)



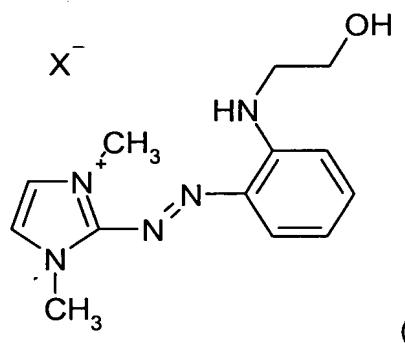
(12)



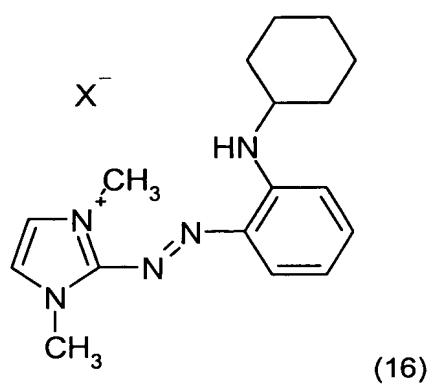
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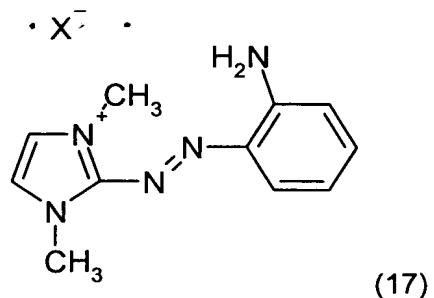
(14)



(15)



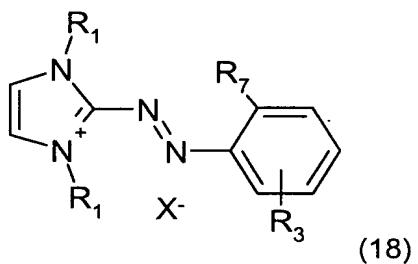
(16)



wherein

$X^-$  is an anion.

6. Cationic dye of formula (18)



wherein

$R_7$  is  $C_1$ - $C_6$ alkoxy or halide, and

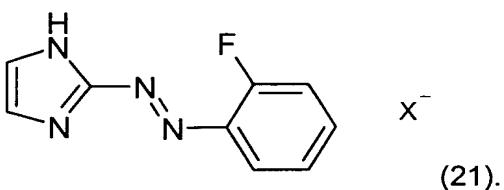
$X^-$  is an anion,

$R_3$  is hydrogen, an unsubstituted or substituted  $C_1$ - $C_{14}$ alkyl, aryl radical,  $C_1$ - $C_6$ alkoxy, cyanid, nitro or halide, and

$R_1$  is an unsubstituted or substituted  $C_1$ - $C_{14}$ alkyl or an aryl radical;

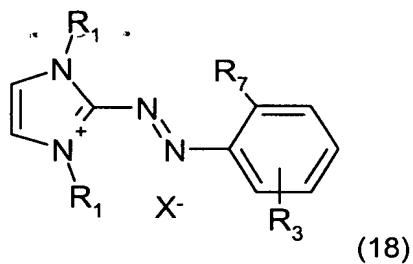
or

a compound of formula (21)



7. A process for the preparation of cationic dyes of formula (1) as defined above in claim 1, comprising

bringing a compound of formula (18)



wherein

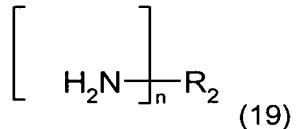
R<sub>7</sub> is C<sub>1</sub>-C<sub>6</sub>alkoxy or halide,

R<sub>1</sub> is an unsubstituted or substituted C<sub>1</sub>-C<sub>14</sub>alkyl or an aryl radical;

X<sup>-</sup> is an anion;

R<sub>3</sub> is hydrogen, an unsubstituted or substituted C<sub>1</sub>-C<sub>14</sub>alkyl, aryl radical, C<sub>1</sub>-C<sub>6</sub>alkoxy, cyanid, nitro or halide;

with an amine of formula (19)



wherein

n is 1 or 2; and

if n is 1, then R<sub>2</sub> is hydrogen, unsubstituted or substituted C<sub>1</sub>-C<sub>14</sub>alkyl; or

if n is 2, then R<sub>2</sub> is an unsubstituted or substituted C<sub>1</sub>-C<sub>14</sub>alkylen;

into contact.

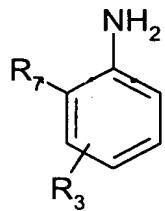
8. A process for the preparation of compound of formula (21) as defined above in claim 6, comprising

a) diazotizing 2-fluoroanilin and

b) then coupling with imidazole.

9. A process for the preparation of cationic dyes of formula (18) as defined above in claim 6, comprising

a) diazotiation of an amine of formula



wherein

R<sub>7</sub> is C<sub>1</sub>-C<sub>6</sub>alkoxy or halide,

R<sub>1</sub> is an unsubstituted or substituted C<sub>1</sub>-C<sub>14</sub>alkyl or an aryl radical;

R<sub>3</sub> is hydrogen, an unsubstituted or substituted C<sub>1</sub>-C<sub>14</sub>alkyl, aryl radical, C<sub>1</sub>-C<sub>6</sub>alkoxy, cyanid, nitro or halide; and

- a) coupling the diazotiated compound with imidazole, and
- b) then alkylation or arylation.

10. A process according to claim 7, wherein compound of formula (18) is prepared by a process according to claim 9.

11. A composition comprising at least a single dye of formula (1) as defined above in claim 1 or a compound as defined in claim 6, or prepared in accordance with a process according to claims 7 to 10.

12. A composition according to claim 11 comprising in addition at least a single further direct dye and/or an oxidative agent.

13. A composition according to claim 11 comprising in addition at least a single oxidative dye and/or; at least a single oxidative dye and an oxidative agent.

14. A composition according to any one of claims 11 to 13, in form of a shampoo, conditioner, gel or emulsion.

15. A method of dyeing organic material, especially human hair, that comprises bringing into contact with the organic material at least a single a dye of formula (1) according to claims 1 to 5, or a compound as defined in claim 6, or a composition according to claims 10 to 13, or a dye as prepared according to claims 7 to 10, and, optionally, a further dye.

16. A method according to claim 15 for dyeing or tinting human hair.

17, A method for dyeing human hair or strands according to claims 15 or 16, that comprises contacting the hair with at least a single a dye of formula (1) as defined in claim 1, or a compound as defined in claim 6, and an oxidative agent and, optionally, a further direct dye.

18. A method for dyeing human hair according to any of claims 16 to 17, that comprises contacting the hair with at least a single a cationic dye of formula (1) as defined in claim 1, or a compound as defined in claim 6, and at least a single oxidative dye; or contacting the hair with a cationic dye of formula (1) as defined in claim 1, or a compound as defined in claim 6, and at least a single oxidative dye and an oxidative agent.